# DOOSAN Document Transmittal

Upper Trishuli-1 HEP (216MW)

| Date | DT No.: | SHEET |
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| 2022-08-12 | UT1-HEP-DHI-PC-D-0058 | 1 OF 1 |

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| SUBJECT | Submission of Review Note RN-0216 and RN-0217 | | |

| S. N. | REVIEW NOTE NO. | REVIEW STATUS | DWG. / DOC. NO. | REV. | DWG. TITLE / DOC. DESCRIPTION | REMARK |
|---|---|---|---|---|---|---|
| 1 | RN-0216 | AN | UT1-C-030-CVL-DG-51001 | 0C | Layout DWG of Downstream Access Tunnel For Desander Basin | 1 SHEET |
| 2 | RN-0217 | A | UT1-C-020-CVL-OT-40012 | 1 | ToR of Hydraulic Model Verification Test for Weir | 3 SHEET |
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Date :

Legend of Review Status
A : APPROVED
AN : APPROVED AS NOTED
RR : RETURN FOR RESUBMISSION
FI : FOR INFORMATION

DHI STAMP

Doosan Enerbility Co., Ltd
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Issued by DHI

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Discipline : Civil

# UPPER TRISHULI-1 HEP (216MW)

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| **Client** | **Nepal Water and Energy Development Company Private Limited** |
| **Owner's Engineer** | **Joint Venture of Tractebel Engineering GmbH & Jade Consult** |

## REVIEW NOTE

| | | | |
|---|---|---|---|
| Contractor | **Doosan Enerbility** | | |
| Title of the Document | ToR of Hydraulic Model Verification Test for Weir & RC-0063 | | |
| Document/Drawing No. | UT1-C-020-CVL-OT-40012 | Revision | 1 |
| Date of Documents/Drawings | 07.08.2022 | Received Date | 07.08.2022 |
| Transmittal Form No. | UT1-HEP-DHI-D-0336 | | |
| Previous Review Date/Status | 04.08.2022/AN | Prev. Review Note No. | RN-0210 |
| Review Note No. | **RN-0217** | **Present Review Date** | **12.08.2022** |
| | | **Present Review Status** | **A** |

A: Approved AN: Approved as Noted RR: Returned for Resubmission FI: For Information, only

**Comments**

1. With the EPC Contractor´s reply comments *RC-0063* all OE´s comments to the initial version of the document under this revision have been accepted by the EPC Contractor.
2. The layouts presented in
   - *Appendix 1 Recommended Layout Drawing of Damsluice*
   - *Appendix 2 Recommended Layout Drawing of Power Intake*

   are not approved with this review note.
3. The attached minutes of meeting *MoM Weir design_hydraulic model test & timeline 10_08_2022* shall be considered as part of the document under this revision.

DISCLAIMER

Any approval will not release the Contractor from any of his obligations under the Contract. Despite the Engineer's approval the Contractor remains fully responsible for design, calculation, dimensioning, supply and installation without limitations.

Sebastian Beck, Chief Design Engineer

**Minutes of Meeting**

**Topic:** **Weir design/ hydraulic model test – timeline**

**Date/ Time:** **Wednesday, 10th of August 2022/10:00am – 11:30am and 04:30pm-05:15pm**

**Location:** **UT-1 site, OE´s office**

**Attendees:** **EMP, OE, EPC Contractor (as per attached attendance list)**

## 1. For the further approach of the physical hydraulic model test of the Weir it has been agreed the following

1.1. Calibrating the model of the Trishuli river at the headworks
- without Weir structure
- by using the Topography from the 2021 field survey which has been used already for the existing 2021 physical model test of the Weir
- hydrology Data from the DKJV Detail Design Package for Construction – II. Civil, subchapter 1. Hydrological analysis report, dated 2013
- Calibration by using an international common numerical software, for example HEC-RAS

1.2. Defining sections for velocity measurements for example at U/S part of the Weir, at the Weir itself, at the apron of the Weir

1.3. Presenting methodology of water level measurement at physical model

1.4. Calibration of the Trishuli River model shall be also done for high flood events (2,000 years frequency and 10.000 years frequency)

1.5. Providing videos of flow conditions of the calibration Trishuli River model from U/S to D/S and vice versa

1.6. The downstream energy dissipation and erosion protection at the apron shall be designed to pass 2.000- and 10.000-year frequency flood

1.7. The river protection works at the banks downstream of the apron may be designed for a lower return period, e.g. 200-yr, since failure of these elements will not endager stability of the weir structure itslef and can be easily repaired after big flood events, if required

1.8. The EPC Contractor shall provide a timeline for the above mentioned tasks until Friday, 12th of August 2022

1.9. Further tasks for the physical model test of the Weir and Intake itselfe will be still defined

1.10. The review note for the document *UT1-C-020-CVL-OT-40012 Rev.1 ToR of Hydraulic Model Verification Test for Weir* is under preparation by OE

## Design Meeting on Hydraulic Model Test Weir

Time:10:00am Date: 08/10/2022

| S.N | Org | Name | Designation | Signature |
|---|---|---|---|---|
| 1 | NWEDC | Myeongjae Yoo | COO | |
| 2 | NWEDC | Ganesh Pd Neupane | DPM | |
| 3 | NWEDC | Lochan Devkota | GM | |
| 4 | NWEDC | Madhusudan Phuyal | Sr Em | |
| 5 | NWEDC | Aneas Bhandari | SCE | |
| 6 | NWEDC | | | |
| 7 | NWEDC | Shrong JL Lama | CE | |
| 8 | NWEDC | Sanjib Gautam | CE | |
| 9 | NWEDC | | | |
| 10 | OE | Lutz Roemer | CRE | |
| 11 | OE | Sebastian Beck | CDE | |
| 12 | | | | |
| 13 | | | | |
| 14 | PC | Xu Xiaochuan | CE | 徐小川 |
| 15 | PC | Zhang Hua | PM | |
| 16 | NWE | Liweigang | CDE | |
| 17 | DE | Abhimanyu Bataya | Design | |
| 18 | DE | Tae Hoon. Yum | Design | |
| 19 | DE | Kahyun. Kim | Design | |
| 20 | NWE | Dong Zheng Zhong | DE | |
| 21 | | | | |